REMARKS

Claims 1-38 are pending in the application and stand rejected. Claims 1, 3, 4, 7-27, and 29-38 are currently amended. No new matter is introduced by the claim amendments. Reconsideration and allowance of the present application in view of the claim amendments and remarks to follow is respectfully requested.

Telephone Conversation With Examiners

Examiner Mejia and Examiner Salad are thanked for the telephone conversation conducted on September 3, 2009. The rejections under 35 U.S.C. § 112 were discussed. The rejections under 35 U.S.C. § 101 were discussed. The rejections under 35 U.S.C. §§ 112 and 101 have been overcome. Proposed amendments were discussed. Asserted art was discussed. The proposed amendments overcome the rejections based on the asserted art.

Claim Rejections – 35 U.S.C. § 112

Claims 1-8, 14, 17, and 24 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite due to recited claim term "sufficient information." In addition, claims 3, 7, 15, 25, 32, and 38 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite due to the recited claim term "inexpensive device." While these claim terms are not believed to render the claims indefinite, the claims have been amended in the interest of advancing prosecution. For instance, the claims have been amended to delete all instances of the term "sufficient." Moreover, each instance of the phrase "an inexpensive computing device" has been amended to recite "a computing device having limited computational ability and storage capacity." Accordingly, withdrawal of the 112 rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 101

Claims 8-32 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter based on the recitation of a "computer-readable medium." In response to this rejection, claims 8-26 have been amended to recite a *computer readable storage medium*. With regard to

claims 27-32, this rejection is respectfully traversed as claims 27-32 are directed to a "computing device" and not a "computer readable medium.". Accordingly, withdrawal of the rejection under 35 U.S.C. § 101 is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and in further view of Halpern (US 7,392,302). It is respectfully asserted that independent claims 1, 4, 8, 17, 27, and 33 as originally filed and as currently amended are patentable over the combination of AAPA and Halpern as follows.

For example, with regard to claim 1, the combination of AAPA and Halpern does not disclose or suggest a method for *performing a distributed fault-tolerant consensus process in a distributed computing system* which *comprises*

transmitting a message from a first transmitting device to a first recipient device, said first transmitting device generating said message while acting as a leader device among the plurality of computing devices, wherein the message comprises a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier,

wherein the vote for the proposed value in said message provides the first recipient device information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier, as recited in claim 1,

In formulating the rejection of original claim 1, the Office Action contends that AAPA teaches (in paragraphs [0003-0010]) a method for selecting a value in a distributed computing system, which comprises *transmitting a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier,* as originally recited. This finding is respectfully traversed.

AAPA generally discloses (in paragraphs [0003-0010]) a conventional PAXOS protocol that is implemented in a distributed computing system to synchronize operations of computing devices implementing the distributed computing system. The PAXOS process allows the computing devices to transmit messages to each other at various stages of the PAXOS process to allow the computing devices to agree upon or otherwise determine which functions/commands to execute at various steps.

While AAPA discloses that computing devices may transmit messages with proposed functions to be executed and messages to cast votes for functions to be executed at different times, AAPA does not disclose a computing device *transmitting a proposed value, a vote for the proposed value, a first proposal identifier, and a first step identifier* at the same time within the context of claim 1 wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier,

Notwithstanding the above, in the interest of advancing prosecution, claim 1 has been amended to further clarify and distinguish over AAPA and Halpern by reciting *transmitting a message from a first transmitting device to a first recipient device, said first transmitting device generating said message while acting as a leader device among the plurality of computing devices, wherein the message comprises a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier,*

Moreover, with regard to the original claim 1, it is respectfully asserted that the combination of AAPA and Halpern does not disclose or suggest *wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing*

system has selected the proposed value in a first system step identified by the first step identifier, as recited in original claim 1.

In formulating the rejection of original claim 1, the Office Acton contends that AAPA discloses (in paragraphs [0003-0010] *wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote* … . but acknowledges that AAPA does not explicitly teach … *whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier.*

Instead, the Office Action relies on Halpern as allegedly disclosing the remaining portion of the "wherein" limitation which recites … *whether a first quorum of the distributed computing system has selected a proposed value in a first system step identified by the first step identifier* based on Halpern's disclosure of a quorum of servers in a cluster agreeing on a decision (in Col. 3, lines 5-48, Col. 7, lines 51-67, Col. 8, lines 1-3, lines 28-67, Col. 9, lines 1-18, and 40-68, Col. 10, lines 1-54, Col. 11, lines 34-57, Col. 12, lines 1-10, lines 50-67, and Col. 7, lines 30-49.)

These findings are respectfully traversed. On a fundamental level, this rejection is based on an unreasonable parsing and separation of the recited elements of the "wherein" claim limitation into different portions that cannot be independently construed. For instance, while the Office Action contends that AAPA discloses the beginning portion of the "wherein" claim limitation that recites "*wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote,* ..." the beginning portion is not construable in proper context without consideration of the remaining portion of the "wherein" claim limitation which recites "… *whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier*.".

Indeed, the parsed out beginning portion of the "wherein" limitation is a grammatically incomplete sentence that is indefinite with respect to what the "first recipient device" can "determine" when viewed independently of the remaining portion which provides the context for what is determined. i.e. *whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier.* Similarly, this parsed out remaining portion of the "wherein" claim limitation is a grammatically incomplete sentence that is indefinite and not properly construable outside of the context of the beginning portion of the "wherein" limitation.

In this regard, when the recited "wherein" limitation is properly construed as a whole, neither AAPA nor Halpern, singularly or in combination, discloses or suggests *wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier*, as recited in original claim 1.

Indeed, because the Office Action admits that AAPA does not explicitly teach … *whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier,* the Office Action must acknowledge that AAPA does not disclose *wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier*, within the proper context of original claim 1.

Likewise, while the Office Action contends that Halpern's disclosure of a quorum of servers in a cluster agreeing on a decision meets the parsed out and independently construed portion of *whether a first quorum of the distributed computing system has selected the proposed*

value in a first system step identified by the first step identifier, the Office Action must acknowledge that Halpern does not disclose *wherein the vote for the proposed value provides a first recipient device sufficient information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier*, within the proper context of original claim 1.

In fact, while the cited sections of Halpern generally disclose a "consensus subsystem" that utilizes a PAXOS process to make a decision, Halpern discloses the use of PAXOS in the context of a process for automatically migrating services from a current host server (which has failed) to another server in a cluster of servers. The consensus subsystem can select a host server from a migratable target list and a migration manager can migrate the service from a current host to the host selected by the consensus subsystem, and can activate an instance of the service on the selected host server. (see, in general, Abstract).

In this regard, while Halpern discloses a quorum of servers in a server cluster agreeing on a decision to migrate services provided solely by one host server to another server, Halpern does not disclose or fairly suggest *wherein the vote for the proposed value provides a first recipient device information to determine, based on the vote for the proposed value and its own vote, whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier*, in the context of original claim 1, much less wherein the first recipient device can determine the quorum based on a message transmitted from a leader device *wherein the message comprises a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier*, within the context of claim 1 as currently amended.

For at least the above reasons, it is respectfully asserted that independent claim 1 is patentable and allowable over the combination of AAPA and Halpern. Moreover, to the extent

that independent claims 8 and 27 were rejected for the same reasons given for independent claim 1, and because claims 8 and 27 (as originally filed and currently amended) include features that are the same or similar to those of claim 1 (as originally filed and currently amended) as discussed above, t is respectfully submitted that claims 8 and 27 are allowable over AAPA and Halpern for the same or similar reasons discussed above with respect to claim 1.

Furthermore, with regard to independent claim 4, it is respectfully submitted that the combination of AAPA and Halpern does not disclose or suggest a method for *performing a distributed fault-tolerant consensus process in a distributed computing system* which *comprises:*

receiving by a first recipient device, a message transmitted from a first transmitting device acting as a leader device among the plurality of computing devices, wherein the message comprises a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier,

wherein the vote for the proposed value provides information for the first recipient device receiving said message to determine whether a first quorum of the distributed computing system has selected the proposed value in a first system step identified by the first step identifier, as recited in claim 4.

While Applicants respectfully traverse the rejection of original claim 4 for similar reasons discussed above with regard to claim 1, in the interest of advancing prosecution, claim 4 has been amended to add further context to the "receiving" and "wherein" limitations to further clarify and distinguish over AAPA and Halpern. For similar reasons discussed above with regard to claim 1, it is respectfully asserted that neither AAPA nor Halpern, singularly or in combination, disclose or suggest *a recipient device receiving a message from a leader device* in a distributed computing system, wherein the message comprises *a proposed value, a vote for the proposed value, a first proposal identifier and a first step identifier* which message allows the *recipient device to determine whether a first quorum of the distributed computing system has*

selected the proposed value in a first system step identified by the first step identifier, within the context of claim 4.

Moreover, to the extent that independent claims 17 and 33 were rejected for the same reasons given for independent claim 4, and because claims 17 and 33 include features that are the same or similar to those of claim 4, it is respectfully submitted that claims 17 and 33 are allowable over AAPA and Halpern for the same or similar reasons discussed above with respect to claim 4.

As for the rejection of dependent claims 2-3, 5-7, 9-16, 18-24, 28-32 and 34-38, it is respectfully submitted that these claims are patentable over AAPA and Halpern for at least the same reasons given by virtue of their dependence from one of respective independent claims 1, 4, 8, 17, 27 and 33, as well as for separately patentable elements contained in such claims. It is to be noted that Applicants generally deny, and do not concede to, any statement, position or averment in the Office Action in support of the claim rejections under 35 U.S.C. 103, which is not specifically addressed by the foregoing arguments and response. Withdrawal of the obviousness rejections is respectfully requested.

CONCLUSION

The Applicants believe that the present remarks are responsive to each of the points raised by the Examiner in the official action, and respectfully submit that all claims are in condition for allowance. Favorable consideration and passage to issue of the application at the Examiner's earliest convenience is earnestly solicited.

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